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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,881	10/23/2003	Arne W. Ballantine	END9-2000-0063-US3	9017
30449	7590	09/19/2006	EXAMINER	
SCHMEISER, OLSEN & WATTS 22 CENTURY HILL DRIVE SUITE 302 LATHAM, NY 12110			HOANG, TU BA	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/691,881

**Applicant(s)**

BALLANTINE ET AL.

**Examiner**

Tu Ba Hoang

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 34-75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-43, 45, 47, 49, 51, 53-59, 62-64, 66, 68 and 70-75 is/are rejected.
- 7) ☒ Claim(s) 44, 46, 48, 50, 52, 60-61, 65, 67, and 69 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/23/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

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***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 41, the recitation of "a product of F and L" renders the claim indefinite because it is unclear for what "a product" of a fraction L of the length L of a portion of the resistor represented. Does Applicant mean the length of the portion heated by the laser radiation? Clarification is needed.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 34-41, 47, 49, 51, 54, 63-64, 66, 68, and 71-75 are rejected under 35 U.S.C. 102(b) as being anticipated by Bennett et al (US 3,842,495). Bennett et al shows an electrical structure (Figure 5) comprising at least a resistor 19 having a length L and an electrical resistance R(t) at a time t (column 3, lines 39-42, i.e., a change in the electrical resistance to a desired value within the range of interest and lines 54-55, i.e., a time interval of between 0.10 and 60 seconds), and a laser radiation 130 (shown as 131 in Figure 5 instead of 131) from source or generator 131 as set forth at column 3, lines 37-38 directed onto a portion of the resistor 19, wherein the portion of the resistor includes a fraction F of length L (column 3, lines 43-44, i.e., the beam may be caused to impinge on successively different portions), and wherein the laser radiation heats the portion of the resistor 19 such that the electrical resistance R(t) instantaneously changes at a rate  $dR/dt$  (set forth at the previous note at column 3, lines 39-42 and further at lines 52-56, i.e., depending on the amount of resistance desired and the intensity of the laser radiation or beam). Regarding claims 35-37, as the laser radiation or beam directed or caused to impinge on successively different portions on the resistor, where each portion is inherently included a fraction of its length with the spot dimension of the laser radiation or beam must inherently be less than the length of each portion (depend upon the desired beam intensity, frequency, or wave length for the desired resistance value noted at column 3, lines 57-65) and it is clear that a fraction of a length must inherently be at least less than or equal to such length but not longer or larger than such length. For a desired unit length, L is at least equal to 1 where F must be within the range of  $\leq 1$ . Regarding claims 38-40, the electrical resistance can be varied at different rate  $dR/dt$  for each desired value and Bennett et al has inherently shown the laser beam or radiation impingement on the relative moving resistor is continued for a time interval of between 0.01 and 60 seconds as previously set forth, wherein such rate can be increased or decreased or unchanged depend upon the desired resistance value.

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Regarding claim 41, as the claim being best understood, "about 1 micron" is a very small value and in Bennett et al, at the time the laser beam caused to impinge on the resistor, the beam impingement spot is inherently small and within the dimension or length of "about 1 micron". Regarding claims 47, 49, 51 Bennett et al also discloses the resistor comprises a mixture of noble metals and oxides including ruthenium, ruthenium silver, palladium silver paste, lead borosilicate glass frits, barium titanate (column 2, lines 31-35) or also chromium and alloys therewith such as Nichrome (column 4, lines 5-7), in which such mixture is considered an equivalence of amorphous metallic material mixed with crystalline metallic material or polycrystalline metal and it is inherently that upon impingement of the laser radiation onto the portion of the resistor, the cell of the amorphous metallic material will be coupled to the cell of the crystalline metallic material within the resistor 19 as the result from the interaction of the laser radiation on the portion in the resistor 19 where at least a portion of the crystalline metallic material would have resulted from melting of at least part of the amorphous metallic material. Bennett et al has inherently disclosed the functional characteristics of the material used in the resistor during subjecting to laser radiation while claims 47 and 49 are merely reciting such inherency of functional characteristic. Regarding claim 54, Bennett et al further shows that the resistor 19 can be coupled to a semiconductor substrate through electrode plates or leads 21. Regarding claim 63, as previously set forth, Bennett et al has disclosed different portions on the resistor 19 can be subjected to laser radiation for desired resistance values where it is in the inherency that each fraction F of the length L of each portion can be predetermined for the desired resistance value upon laser radiation of the resistor 19 during experimentation or manufacture. Regarding claims 64, 66, 68 and 71, the claimed limitations are met as for the reason advanced to claims 47, 49 and 5 above. Regarding claims 72-74, the claimed limitations are met as for the same reason advanced to claims 35-37 and 41 above. Regarding claim 74, the resistor 19 is coupled to a semiconductor substrate through first and second electrically conductive contacts or leads 21 as previously noted, and an electrical circuit element 34, 35 shown in Figure 5 is coupled to the contacts or leads 21 to form an electrical circuit that includes the electrical circuit element 34, 35 and the resistor 19.

Claims 34-43, 45, 53-59, 62, 63, and 70-75 are rejected under 35 U.S.C. 102(b) as being anticipated by Chapel, Jr. et al (US 4,907,341). Chapel et al shows all features of the claimed invention including an electrical structure (Figure 2) comprising a resistor 46 of length L and comprising N layers 42, 44 (i.e., N=2), wherein a portion of the resistor 46 includes a fraction of the length L and electrical resistance characteristic which can be described in the similar manner noted in the rejection above. Chapel et al further shows the resistor 46 includes the first layer 42 of an electrical conductive material or resistive material, the second layer 44 of different electrical conductive material (i.e., adjustment material) is in electrically conductive contact with the first layer 42 an electrical resistance, and a laser radiation (i.e. laser trimming) directed onto a portion 52 of the resistor 46, wherein the portion of the resistor inherently includes a fraction of its length, and wherein the laser radiation heats the portion 52 of the resistor 46 where the electrical resistance is inherently and instantaneously changed at a rate

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based on trimming time interval, each one of the layers 42,44 has its own cell and material within the portion of the resistor 46 to be trimmed, wherein the cell of the first layer 42 is coupled to the cell of the second layer 44 and the chemical combination of the resistor 46 at the portion 52 to be treated comprises the combination of the materials from both first and second layers 42,44.

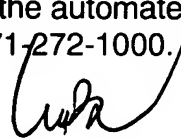
Claims 44,46,48,50,52,60,61,65,67, and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Knall et al (US 6,013,986), Binder et al (US 4,622,856), Bartush et al (US 5,233,327), Emili et al (US 6,667,683) and Ballantine et al (US 6,647,614 and US 6,862,799). Each citation shall be separately considered and considered in conjunction with the others in response to this Office Action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-Thu from 6:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tu Ba Hoang  
Primary Examiner  
Art Unit 2832

September 11, 2006